#### Installation manual electro fusion coupler bifilar PE 100 RC, Code 373, dimension 1600 SDR 26



AGRU Kunststofftechnik GmbH

	By scanning this QR code you are guided to our	Cooling and waiting times
	installation video.	
Instruction		scan here
Standards and regulations	AGRU large diameter couplers can be processed with PE 100 ISO 4427 and ISO 4437. National regulations have to be con index (MFR 190/5) between 0.2 g/10' and 1.7 g/10'.	(-RC) and PE 80 pipes according to DIN 8074/75, EN 1555-2, EN 12201-2, sidered separately. The pipes that are to be used have to have a melt flow
Processing information	The processing temperature between +5 °C and +45 °C are direct solar radiation, etc). The welding zones of the E-couple concerning the inside as well as the outside. Welding while n same temperature level during the processing (conditioning)! <b>!!!Read processing guidelines of all to</b>	approved. The welding area has to be protected from the weather (rain, r and the pipe have to be dry during the entire welding process - nedia leaks from the pipe is not allowed. Pipes and fittings have be on the <b>ols / components very carefully!!!</b>
Cut the pipe	If the pipe has to be cut, it needs to be cut rectangular with a	e suitable cutting tool.
Pre-cleaning	The pipe has to be cleaned from rough dirt in the insertion an pre-cleaning.	ea by a lint-free and undyed disposable paper. Never use soapy water for
1 Welding of first E-Couple	er side	
1.1 <i>Measuring ovality</i>		
1.1.1	The diameter of the pipe has to be ch	ecked on 4 locations diagonally with a measuring tape as per sketch.
1.1.2	The side with the largest OD has to b         rounding clamp to work properly, see	e determined and must be placed horizontally, in order to allow the re- sketch below:

Ersteller:	Großauer, K. / Pramper, C.		Prüfer:	Gruber, Ing. E.	Freigeber:	Gruber, Ing. E.	
Rev.:	005	Dokumenten - ID	34066		Seite 1 von 10	Freigabe:	06.12.2023

#### *Installation manual electro fusion coupler bifilar PE 100 RC, Code 373, dimension 1600 SDR 26*



AGRU Kunststofftechnik GmbH

1.2	Removing the oxide layer	
1.2.1		Assemble the electrical peeling chain. <b>!!!Read processing guidelines of all tools</b> / components very carefully!!!
1.2.2	E-coupler length/2 40 mm End Start Scraping area	The pipe has to be marked as follows: 40 mm from the pipe end = Beginning of scraping area E-coupler length/2 = Insertion depth of E-coupler The area between both marked points is the area to be scraped.
1.2.3		Apply the electrical peeling chain <b>(this peeling chain is supplied by AGRU, and only this special item shall be used for peeling of this E-coupler dimension OD 1600 mm)</b> onto the pipe and place it to the marked start position. Then the oxide layer has to be removed completely (>0,2mm) beginning from 40 mm from pipe end up to the end marking (E-coupler length/2).
1.2.4		Therefore tension the electrical peeling chain by the strap ratchet.
1.2.5		During tensioning, you must observe the tension indicator on the spring wagon. This must be within the highlighted range. There is no general setting here because the chain can also be used on different pipe dimensions.
1.2.6		

Ersteller:	Großauer, K. / Pramper, C.			Prüfer:	Gruber, Ing. E.	Freigeber:	Gruber, Ing. E.
Rev.:	005	Dokumenten - ID	34066	Seite 2 von 10		Freigabe:	06.12.2023

### $O\!E \bullet * ^ a\!\! : \overset{\times}{\otimes} o\!\! A \ c \!\! : \overset{\times}{\otimes} o\!\! A \ c \!\! : \overset{\times}{\otimes} o\!\! A \ a \!\! : \overset{\times}{\otimes} o\!\! : \overset{\times}{\otimes} o\!\! A \ a \!\! : \overset{\times}{\otimes} o\!\! : \overset{\times}{\otimes} o\!\! A \ a \!\! : \overset{\times}{\otimes} o\!\! : \overset{\times}{\otimes} o\!\!$

## AGRULINE

#### *Installation manual electro fusion coupler bifilar PE 100 RC, Code 373, dimension 1600 SDR 26*



AGRU Kunststofftechnik GmbH

1.2.7		Ensure that the drive wheel does not yet touch the pipe surface.
1.2.8		Start to move the electrical peeling chain by hand first. Check if the shaving is continuously and does have a thickness of ≥0,2 mm.
1.2.9	SO 8772	Place the electrical peeling chain to the start position (40 mm from pipe end). Insert the drive and support it by moving the drive wheel slightly up and down.
1.2.10		Once the drive is latched, tighten the tongue lever to fix it.
1.2.11		Start the drive.

Ersteller:	Großauer, K. / Pramper, C.			Prüfer:	Gruber, Ing. E.	Freigeber:	Gruber, Ing. E.
Rev.:	005	Dokumenten - ID	34066	Seite 3 von 10		Freigabe:	06.12.2023

### $CE \bullet * ^ a | ` \& o A \} c | a * o k a a A O [ ` { ^} o A a @ A A ^ ; ` } * \bullet a a \} \bullet c$

# AGRULINE

### *Installation manual electro fusion coupler bifilar PE 100 RC, Code 373, dimension 1600 SDR 26*



AGRU Kunststofftechnik GmbH

1.2.12		Press the pressure element down as shown in the picture. When you feel resistance, keep pushing. The drive wheel then touches the pipe surface. The chain is also tensioned a little. Note the indicator on the spring wagon.
1.2.13	150 A772 2020 Chome Chome	If possible, remove the shaving by hand continuously during the shaving process.
1.2.14		The rotation of the electrical peeling chain can be supported by hand slightly.
1.2.15		Once the end position (E-coupler length/2) is reached, grab the handle or the strap to stop the drive.
1.2.16		Remove the driving wheel from the pipe surface.
1.2.17		The pipe has to fulfil the following requirements after scrapping: Minimum diameter = nominal diameter - 0.4 mm A single removal of minimum 0.2 mm, depending on the fit, may already be enough. Damages within the welding zone such as grooves or scratches are not permissible. Due to the big tolerance range of pipes it may be necessary to repeat the scraping of the round pipe. In order to avoid multiple try-ons we recommend measuring the pipe's diameter prior to the scraping. The prepared area has to be protected from impurities and unfavorable weather conditions (humidity effects or frost formation).

Ersteller:	Großauer, K. / Pramper, C.			Prüfer:	Gruber, Ing. E.	Freigeber:	Gruber, Ing. E.
Rev.:	005	Dokumenten - ID	34066	Seite 4 von 10		Freigabe:	06.12.2023

#### *Installation manual electro fusion coupler bifilar PE 100 RC, Code 373, dimension 1600 SDR 26*



AGRU Kunststofftechnik GmbH

1.3	lamping device (re-rounding tool)	
1.3.1		Mark the insertion depth (E-coupler length/2) of the E-coupler again visible on several locations around the circumference.
1.3.2		Lift the clamping device for re-rounding and sleeve it onto the pipe. (this re-rounding tool is supplied by AGRU, and only this special item shall be used for re-rounding of the pipes during every welding process of E-coupler dimension OD 1600 mm)
1.3.3		Place the clamping device directly onto the marking, in order to create a mechanical end-stop for the E-coupler.
1.3.4		<i>Fix the hydraulic hose from the manometer side to the hydraulic hose that is already mounted on the cylinder of the clamping device.</i>
1.3.5		Fix the second hydraulic hose from the pump to the hydraulic cylinder on the clamping device.
1.3.6		Insert the lever into the hydraulic cylinder.

Ersteller:	Großauer, K. / Pramper, C.			Prüfer:	Gruber, Ing. E.	Freigeber:	Gruber, Ing. E.
Rev.:	005	Dokumenten - ID	34066	Seite 5 von 10		Freigabe:	06.12.2023

### $O\!E \bullet * ^ a\!\! : \overset{\times}{\otimes} o\!\! A \ c \!\! : \overset{\times}{\otimes} o\!\! A \ c \!\! : \overset{\times}{\otimes} o\!\! A \ a \!\! : \overset{\times}{\otimes} o\!\! : \overset{\times}{\otimes} o\!\! A \ a \!\! : \overset{\times}{\otimes} o\!\! : \overset{\times}{\otimes} o\!\! A \ a \!\! : \overset{\times}{\otimes} o\!\! : \overset{\times}{\otimes} o\!\!$

## AGRULINE

#### Installation manual electro fusion coupler bifilar PE 100 RC, Code 373, dimension 1600 SDR 26



AGRU Kunststofftechnik GmbH

1.3.7	Place the spacer and tighten the Nut of the hydraulic lever.
1.3.8	Turn the switch on the hydraulic pump to the left "closed" side.
1.3.9	<i>Open the valve on the connection from the manometer to the hydraulic zylinder (anticlockwise).</i>
1.3.10	Activate the manual hydraulic pump to re-round the pipe. Keep carefully and slowly pumping until the pipe is perfectly round and there is no gap between the re-rounding clamping device and the pipe anymore. This will require around 100 bar on the manometer.
1.3.11	Once the pipe is fully re-rounded, close the check valve to keep the pressure stored (clockwise). Now the hydraulic pump can be removed and used to re-round the pipe to be welded on the other E-coupler side.

Ersteller:	Großauer, K. / Pramper, C.		Prüfer:	Gruber, Ing. E.	Freigeber:	Gruber, Ing. E.	
Rev.:	005	Dokumenten - ID	34066	Seite 6 von 10		Freigabe:	06.12.2023

### $O\!E \bullet * ^ a\!\! : \overset{\times}{\otimes} o\!\! A \ c \!\! : \overset{\times}{\otimes} o\!\! A \ c \!\! : \overset{\times}{\otimes} o\!\! A \ a \!\! : \overset{\times}{\otimes} o\!\! : \overset{\times}{\otimes} o\!\! A \ a \!\! : \overset{\times}{\otimes} o\!\! : \overset{\times}{\otimes} o\!\! A \ a \!\! : \overset{\times}{\otimes} o\!\! : \overset{\times}{\otimes} o\!\!$

## AGRULINE

005

Rev.:

34066

Dokumenten - ID

#### *Installation manual electro fusion coupler bifilar PE 100 RC, Code 373, dimension 1600 SDR 26*



AGRU Kunststofftechnik GmbH

06.12.2023

Freigabe:

B5115

1.4	Mounting retractor type A					
1.4.1		Place the retractor type A onto one side of the E-coupler. <b>Fix the screws just slightly by hand force only.</b>				
1.4.2		Lift the Retractor assembly with the E-coupler.				
1.4.3		Clean both, pipe and E-coupler with Aceton and a lint- free disposable cloth.				
1.4.4		Clean the pipe properly around the entire circumference in the scraped area.				
1.4.5		Clean the E-coupler properly on the entire inside surface.				
1.4.6		Sleeve the E-coupler onto the scraped area of the pipe until it meets the end stop of the clamping device.				
Ersteller	: Großauer, K. / Pramper, C. Prüf	er: Gruber, Ing. E. Freigeber: Gruber, Ing. E.				

Seite 7 von 10

### $O\!E \bullet * ^ a\!\! : \overset{\circ}{\otimes} o\!\! A \ c \!\! : \overset{\circ}{\otimes} a \!\! : \overset{\circ}{\otimes} a$

### AGRULINE

#### Installation manual electro fusion coupler bifilar PE 100 RC, Code 373, dimension 1600 SDR 26



AGRU Kunststofftechnik GmbH

1.4.7				The sleeve on process can be supported by tension b	on process can be supported by tension belts, or alternatively with the supplied hydraulic cylinders.		
1.5	Welding						
1.5.1			Apply the tension belt for the welding in the therefore provided groove on the E-coupler. The tension belt shall be of 8m length and is available at AGRU with article number SAGSPANNGO2. Loosen the screws of the mounting retractor so that the E-coupler does not get oval.				
1.5.2				<i>Tighten the belt by hand with the ratchet lever until anymore.</i>	the belt is so tig	ht that it cannot be moved by hand	
	Both contact pl	ugs of the coupler have to be conn	nected to	the connection sockets of the welding device.			
	It has to be take	en care of a sufficient performance	e of the I	velding device and if need be of the generator.			
1.5.3	Suitable welding	g machines:					
	AGRU 300 Price	on		AGRU Productcode SHR300PRI00			
	Polycontrol Plus	5		AGRU Productcode SFRPOLCON00			
1.5.4				Place the connector pins and fix the cables with a power tape to prevent any tension during the welding proces			
1.5.5		Pricon		Then "Enter barcode" appears on the display. Press the hash (#) button to insert the welding parameters (which are already filed in the welding machine by the supplied software from AGRU – attention, this is valid only for the OD 1600 SDR 26 E-coupler!).			
Ersteller:	Großauer,	K. / Pramper, C.	Prüfer	Gruber, Ing. E.	Freigeber:	Gruber, Ing. E.	
Rev.:	005	Dokumenten - ID 34066		Seite 8 von 10	Freigabe:	06.12.2023	

### 

## AGRULINE

Rev.:

005

Dokumenten - ID

34066

#### *Installation manual electro fusion coupler bifilar PE 100 RC, Code 373, dimension 1600 SDR 26*



AGRU Kunststofftechnik GmbH

06.12.2023

Freigabe:

B5115

1.5.6	pricon UF HURNER Tesistance Meas. Non. Time : 71275 SKT 48.00 0.620 SKT 48.00 0.620 SKT 48.00 0.620 SKT 48.00 0.620 SKT 48.00 0.620 SKT 50.00 SKT	The welding parameters are now inserted and visible on the display.			
1.5.7		Re-check the welding parameters shown on the display with the table below if they are correct:         WELDING PARAMETERS AGRU COUPLER DIM1600 SDR26         VOLTAGE:       48 V         AMBIENT TEMPERATURE - WELDING TIME         5 - 14 °C       7517 sec         15 - 25 °C       6960 sec       26 - 35 °C       6612 sec         26 - 35 °C       6612 sec         36 - 45 °C       6264 sec         welding only with tension belts !         COOLING TIME 1       180 min         Cooling time bevor removing the clamping device and tension belts.         270 min         Total time after ending the cooling time has ended and before a full test and/or operating pressure can be applied         After the welding process, the specified cooling time has to be met. If an interruption of the welding occurred (e.g. power failure), the welding can be repeated after a total cooling down (<35 °C).			
1.5.8	Pricon Pricon Provide da unit of the state Provide da unit of t	Confirm the question "pipe treated" by pressing the start button again.			
1.5.9	Start ? IS C Tenp: : IS C G IGBOM SKT 48.00 SKT 48.00 SK	Confirm the question "Start" by pressing the start button again.			
1.5.10	Welder X Welding Number 1 Welding time 6960 sec 25.01.2021 - 10:30 h welding finished 25.01.2021 - 13:30 cooling time finished 25.01.2021 - 13:30 cooling time finished 25.01.2021 - 13:30 cooling time finished 25.01.2021 - 10:30 h welding finished 25.01.2021 -	<ul> <li>Once the welding is finished, mark the following information on the welded E-coupler side with an indelible marker clearly visible: <ul> <li>Welder Name/number</li> <li>Welding number (consecutive number to trace the marking with the welding protocol which is saved in the welding machine)</li> <li>Welding ok</li> <li>Welding time (sec.)</li> <li>Date and time when the welding time is finished (add 3h to the welding finish time)</li> </ul> </li> </ul>			
Ersteller	Großauer, K. / Pramper, C. Prüfe	er: Gruber, Ina. E. Freigeber: Gruber, Ina. E.			

Seite 9 von 10

#### *Installation manual electro fusion coupler bifilar PE 100 RC, Code 373, dimension 1600 SDR 26*



AGRU Kunststofftechnik GmbH

B5115

2	2 Welding of second E-Coupler side					
2.1		The welding preparation and welding procedure is to be carried out in exactly the same way then for the first E- coupler side. To insert the pipe on the second E-coupler side, the mounting retractor set – type B is requested. The pipe can also be inserted by tension belts or the supplied hydraulic cylinders.				
2.2		Whenever all weldings are finished, save all welding protocols which are stored in the welding machine on a USB stick and store them carefully. All welding numbers marked on the E-couplers must be fully traceable to the stored welding data.				
2.3		<i>Once the E-coupler is welded on both sides, the re-rounding clamps can be removed. Therefore open the check valve (anti-clockwise).</i>				
2.4		<i>Turn the switch on the hydraulic pump to the right "open" side.</i> <i>The pressure will drop and the hydraulic cylinder can be removed.</i>				

#### Safety instructions

Non-compliance of this installation guideline as well as the following safety instructions may lead to serious accidents, damages to health and objects.

Local standards and regulations concerning occupational health and safety have to be followed. If available the security and safety plan on the construction site must be adhered.
 During the entire installation procedure appropriate safety shoes have to be worn.

• While working in a trench and/or the possible danger of falling objects (e.g. rockfall) an appropriate safety helmet has to be used.

• When working with knifes as well as burring and scraping tools it is recommended to wear cut resistant gloves.

PE cleaners are highly flammable. Fumes from cleaning agents can form potentially explosive mixtures. Keep away from ignition sources. Do not smoke. Avoid naked flames and sparking. Keep the container of the PE cleaner tightly closed.

If pipes are not cut rectangular and/or not completely inserted into the e-fitting the heat generated by the resistance wire cannot be passed on to the pipe. This may result in overheating, uncontrolled melt formation or selfignition.

In general it is recommended to keep a safety distance of at least 2 meters to the e-fitting during the welding process. If this is impossible appropriate personal protective equipment is necessary (long sleeved clothes, gloves and sealed protective glasses).

Ersteller:	Großauer, K. / Pramper, C.			Prüfer:	Gruber, Ing. E.	Freigeber:	Gruber, Ing. E.
Rev.:	005	Dokumenten - ID	34066		Seite 10 von 10	Freigabe:	06.12.2023